Assistant Secretary for Environment, Safety and Health

U. S. Department of Energy
Washington, D.C. 20585

E&H SYNERGY

DOE/EH-0487-2

Straight Talk From Peter Brush, Acting Assistant Secretary for Environment, Safety and Health

On March 3, 1998, the Synergy staff interviewed Peter Brush, Acting Assistant Secretary for Environment, Safety and Health at his office.

Mary Cunningham:
What are the most important safety and health issues now facing DOE?

Peter Brush:
I think the principal safety and health issues that we face are associated with the increasingly changing nature of the work that goes on at DOE facilities. We've found that large numbers of facilities are aging, their functions are changed, and they're no longer performing the functions for which they are designed. This represents a serious problem that has to be addressed. And, while I have a chance, I'd also like to mention the issue of protecting our workers at DOE facilities who are exposed to beryllium in their work. We have a major initiative underway in the Office of Environment, Safety and Health to provide additional protection for workers who are exposed to beryllium. I'm pleased to say that last Thursday Deputy Secretary Moler signed the first part of this new policy when she approved a Department-wide policy on the work-relatedness of chronic beryllium disease. I would say those are two of the major safety and health issues that we are facing.

Mary Cunningham:
How will EH function during the transition to a new Assistant Secretary? What does the timing look like, and do you have any idea of the type of person who is being considered?

Peter Brush:
My experience with times of transition is that it is most important to keep the work of the Office moving ahead without any delay and without any pause. That is what I am trying to do during this transition, so the EH functions during the transition should look just like they did before Dr. O'Toole resigned. As far as a new Assistant Secretary is concerned, I am very optimistic, based on what Secretary Peña has told me, that a new Assistant Secretary for Environment, Safety and Health will be named soon and that person will have excellent credentials in one of the many fields we engage in.

Mary Cunningham:
Secretary Peña has expressed a strong interest in safety and health resulting from the Brookhaven National Laboratory experience and the Hanford chemical explosion. However, no general Secretarial policy has been issued. What is the current administration's philosophy on DOE safety and health?

Peter Brush:
Well you are absolutely right that Secretary Peña has taken a strong position on safety and health—and I would add to that—environmental protection. His decisive actions following the incident at Brookhaven National Laboratory last summer are clear evidence of this. With respect to a Secretarial policy statement, I would say that in many ways the Secretary has already issued such a statement. I would call the attention of your readers to the memorandum that he submitted to all Program Secretarial Offices last August in which he called for all departmental elements to follow the main elements of, what we now call, Integrated Safety Management. Having said that, however, let me say that the Secretary has asked us to begin preparation of an overall policy statement on environment, safety, and health that reflects his commitment to the principles of Integrated Safety Management. He and Deputy Secretary Moler and Under Secretary Moniz have discussed this in detail with the Department's Field Office managers and with the Program Offices. We also discussed it at length during the Secretary's offsite meeting with senior managers last week. So, I am optimistic that we will have such a general statement out very quickly. It should be out sometime this month, I believe.

Mary Cunningham:
The Department is rapidly pursuing the Integrated Safety Management System for all its environment, safety, and health activities. What does it mean to DOE employees and contractors? How does it fit into EH's safety and health programs? And, why is it not managed by EH?

Peter Brush:
I would think that the two most important things I would mention in terms of what Integrated Safety Management

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ES&H SYNERGY

ES&H Synergy is a quarterly newsletter published by DOE's Office of Environment, Safety and Health (EH) to promote awareness and information exchange of all environment, safety, and health issues impacting DOE personnel and contractors. Each issue highlights Headquarters and field initiatives in environment, health physics, nuclear and facility safety, occupational medicine, and occupational safety and health. To be added to the distribution list or to receive a copy of this publication, call 1-800-473-4375. Synergy is also available electronically through Technical Information Services at http://tis.eh.doe.gov/docs/synergy/synergy.html.

EXECUTIVE EDITOR
R. Stephen Scott (EH-72) • (301) 903-3033
MANAGING EDITOR
Mary Cunningham (EH-72) • (301) 903-2072
COORDINATING EDITOR
Cathy Brown • (301) 972-3169
GRAPHIC DESIGN
Patti Sygeel • (301) 601-4910

ASSOCIATE EDITORS
Oversight:
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Nuclear and Facility Safety:
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means to our employees and contractors are these. First, with respect to DOE employees, we finally have in place a clear statement of responsibilities and authorities within the Department; line employees know their responsibilities as do staff employees. For contractors, the main effect is going to be with respect to the requirement for worker participation in the design of safety systems at DOE facilities. That is a central piece of Integrated Safety Management, and it is crucial to its success. With respect to EH programs, we have in fact been using Integrated Safety Management principles for a long time. In the work that has been done with Enhanced Work Planning, with Work Smart Standards, and with our development of rules and policies and guides, we have been following Integrated Safety Management.

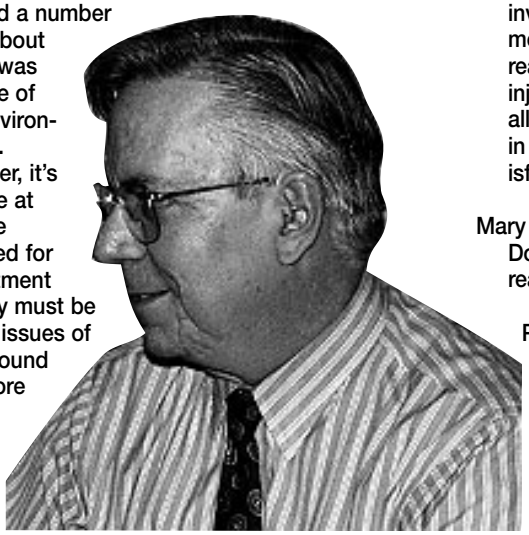
The issue of where it is managed is a good one. My answer to that is that it is clear that Integrated Safety Management has to be managed by the organizations responsible for operation of the DOE facilities at which it is being used—by the line managers. Since EH is not a line manager, it would not be appropriate for us to manage the entire program.

Mary Cunningham:
The Department has made considerable progress in the last 10 years in safety and health improvements. Why is external regulation being considered? What are its implications and timing?

Peter Brush:
The principal reason for considering the move to external regulation is to increase the Department's credibility with its stakeholders and workers, as well as with the neighbors of our Department's activities. There are likely to be additional benefits, however. Among those may well be efficiencies and possibly some savings. Additionally the rigor that external regulation will bring to the work of the Department may have a positive effect on safety programs. In terms of its timing, we are now in the pilot phase of our work with the Nuclear Regulatory Commission on testing their system for regulation, and we are about to begin a pilot process with the Occupational Safety and Health Administration.

Mary Cunningham:
The Brookhaven National Laboratory experience was a major shift in the way DOE does business. What are the safety and health implications for DOE contractors and the impact on their contracts?

Peter Brush:
It's important to remember that the Secretary's decision with regard to the contractor at Brookhaven was not exclusively based on environment, safety, and health issues. Secretary Peña made it clear that he had a number of important concerns about the way the Laboratory was being operated, only one of which had to do with environment, safety, and health. Having said that, however, it's clear that the experience at Brookhaven should have important lessons learned for other sites in the Department of Energy complex. They must be more heavily attuned to issues of the public perception around their sites, as well as more aggressive with putting into place Integrated Safety Management Systems at their sites.



Mary Cunningham:
The Management and Integrating (M&I) contractor concept has had mixed safety and health results. What is the future of M&I contractors in DOE?

Peter Brush:
Mixed results, of course, is an attribute of all the different contracting mechanisms that we've tried at the Department of Energy. I personally don't think that the nature of the contract is as important as the contractor's commitment to the principles of Integrated Safety Management, including worker participation. Under either the M&O [Management and Operating] or M&I approach, contractors have to commit to actively involving their workers in the development of safety standards and the assessment of the hazards associated with the work.

Mary Cunningham:
A key to good worker safety and health is the awareness and attitude of the worker and first-level supervisor. How is, or will, EH improve this area?

Peter Brush:
That is exactly right. We must convince our contractors to encourage the workers and their immediate supervisors to participate directly in the development of safety and health standards and the evaluation of hazards associated with the work. EH is involved in this in a number of ways—the most important of which is the Enhanced Work Planning initiative. Under this initiative, we have experts from our offices assisting field elements in putting together programs that will more heavily involve workers in this area.

Mary Cunningham:
What can EH do to ensure visibility and recognition for its implementation of initiatives and completion of programs?

Peter Brush:
That's an interesting question because so much of what we do in EH is "behind the scenes" kinds of work. Since we don't run any facilities, we don't often have an opportunity to go out and cut a ribbon or dig a shovelful of dirt with photographers taking pictures. What we do is in support of the work being carried out by others. Nevertheless it is possible for all of us to take great satisfaction in the work we do when we see its results. Some examples are the completion of important health studies, which add to the scientific knowledge associated with radiation protection and other workplace issues. Another example is the real day-to-day impact that our work can have on individuals. As an example of this, I would cite a recent e-mail that I got from a group of people in the Inspector General's Office who were involved in a serious automobile accident in January. They sent me a very lovely e-mail message in which they indicated that the reason all of the people in the van escaped with only minor injuries is that they had taken the advice put out by EH requiring all of them to wear their seatbelts. So there are real opportunities in our work, I think, to have an impact on people and to take satisfaction in what we do.

Mary Cunningham:
Do you have any final thoughts you'd like to share with our readers across the DOE complex?

Peter Brush:
Yes. Keep up the good work.

The Synergy staff would like to thank Mr. Brush (who graciously agreed to be first, in what we intend to be a series of interviews with DOE management during the upcoming year) for his time and for his thoughtful and candid responses to our questions.

Updated PCB Requirements Scheduled for Approval in 1998

The U.S. Environmental Protection Agency (EPA) has been endeavoring for the last several years to streamline requirements for cleaning up and disposing of polychlorinated biphenyls (PCBs). Currently, PCB disposals are regulated under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or Superfund); the Resource Conservation and Recovery Act (RCRA); and the Toxic Substances Control Act (TSCA).

On December 6, 1994, the EPA issued a proposed rule (59 FR 62788) under TSCA to amend its PCB rules to address a broad range of matters. EPA believes that overall this rulemaking will result in substantial cost savings to members of the regulated community, including Department of Energy (DOE) facilities, while protecting human health and the environment against unreasonable risk of injury from PCB exposure. The final rule has been delayed for a reassessment of carcinogenic risks and is scheduled for approval in 1998.

PCBs are mixtures of synthetic organic chemicals that can take on different forms ranging from oily liquids to waxy solids. PCBs have significant ecological and human health effects, including cancer, neurotoxicity, reproductive and developmental toxicity, immune system suppression, liver damage, skin irritation, and endocrine disruption. Toxic effects have been observed from acute and chronic exposures to PCB mixtures with varying chlorine content.

Proposed Rule Codifies 19 Years of Regulations—The changes noted in the proposed rule referenced above would codify the intricate PCB policies and regulations that have been developed and implemented over the past 19 years. This rule will also result in streamlined procedures with a focus on self-implementing provisions, the elimination of duplication, and significant cost savings.

In brief, the rulemaking adds new sections on standards and procedures for disposing of remediation waste and certain products manufactured with PCBs; procedures for determining PCB concentration; standards and procedures for decontamination; controls over the storage of PCBs for reuse; and a mechanism for coordinating TSCA disposal approvals for the management of PCB wastes among various Federal programs, including cleanup under RCRA Corrective Action provisions and the Superfund remedial programs. The rulemaking also updates several sections dealing with marking, recordkeeping, and reporting requirements. A partial final rule was issued on March 18, 1996 (61 FR 11096), regarding the import and export of PCBs for disposal at concentrations of 50 parts per million (ppm) or greater under certain circumstances.

ORD Report Addresses Cancer Dose-Response Assessment—One of the reasons for the delay in finalizing the proposed rule is a report issued by EPA"s National Center for Environmental Assessment (NCEA) of the Office of Research and Development (ORD). The report, *PCBs: Cancer Dose-Response Assessment and Application to Environmental Mixtures* (EPA/600/P-96/001F), updates the cancer dose-response assessment for PCBs. It also shows how information on toxicity, disposition, and environmental processes can be considered together to evaluate health risks from PCB mixtures in the environment. This report is to be used to support risk-based decisions within the general policy framework provided by applicable environmental statutes and regulations and does not alter such policies.

Because of the information in the report, EPA has been reevaluating the standards that will guide the future cleanup and disposal of PCBs. Previously, only one PCB mixture, Aroclor 1260, had been adequately tested, and there was uncertainty about whether other PCB mixtures would be carcinogenic. EPA"s new information indicates that all environmental PCB mixtures can pose some risk of cancer. The information allows distinctions to be made in the potency values of different PCB mixtures in the environment. The range spans a 30-fold difference from top to bottom.

According to the report, processes that chemically change PCB mixtures after release into the environment also need to be considered in assessing the mixtures. Thus, guidance is given on applying a range of dose-response parameters to different exposure routes, partial lifetime exposure, and mixtures of varying composition. Significant factors that influence the potency of environmental mixtures include the environmental processes that alter a PCB mixture after release into the environment—partitioning into different environmental media, chemical transformation in the environment, and bioaccumulation in living organisms.

PCBs Remain a Serious Concern—Because of evidence that PCBs persist in the environment and cause harmful effects, domestic manufacture of commercial mixtures was stopped in 1977. Existing PCBs, however, continue in use. Because of their inflammability, chemical stability, and insulating properties, commercial PCB mixtures had been used in many industrial applications, especially in capacitors and transformers. Other electrical equipment that used PCBs included switches/reclosers, light ballasts, small capacitors, and voltage regulators. Prior to 1976, a number of other common items also contained PCBs, including heat transfer systems, electromagnets, metal cutting and shaping tools, ventilation gaskets, and adhesives.

PCBs are considered widespread in the environment, and humans are exposed through multiple pathways. Levels in air, water, sediment, soil, and foods vary over several orders of magnitude, often depending on proximity to a source of release into the environment.

The overall intent of the proposed PCB regulations is to eliminate PCBs, while reducing the economic burden on the regulated community by allowing continued use under circumstances that have been determined to be "safe."

Material for this article has been abstracted from a variety of sources, including the *Federal Register* citations and the ORD report mentioned above; EPA"s RCRA Report, January 19, 1997; DOE"s *Environmental Guidance, Management of Polychlorinated Biphenyls (PCBS)—Questions and Answers,* DOE/EH(TSCA)-001; and DOE"s Technical Assistant Project: P*CB Regulations and Their Applications to Deactivation and Decommissioning Activities,* April 1996. For more information, contact Beverly Whitehead, Office of Environmental Policy and Assistance, RCRA/CERCLA, EH-413, at (202) 586-6073; fax, (202) 586-3915; or e-mail *(beverly.whitehead@eh.doe.gov).*

NEPA and ISO 14001–A "Significant" Difference

There is potential for confusion—especially among the public—when the term "significant impact" is used in different contexts. "Significant impact" is a key concept under the National Environmental Policy Act (NEPA). Whether a certain proposed action might or might not have a significant environmental impact is decisive in choosing the appropriate level of NEPA analysis required for that action. The recently issued environmental management system (EMS) standard, ISO 14001, uses the same term, "significant impact," in a somewhat different way. Staff members in the Office of Environment, Safety and Health have been at the forefront in showing that NEPA and ISO 14001 can complement each other in assuring protection of the environment. But care is needed to avoid confusion because the same words have different implications in "ISO-speak" and "NEPA-speak."

NEPA was enacted in 1969, and signed into law on January 1, 1970, long before ISO 14001 was developed. In September 1996, the International Organization for Standardization (ISO) published the first in a series of voluntary international standards dealing with environmental management. ISO 14001 identifies elements of an EMS, against which an organization can be audited. (ISO 14010, 14011, and 14012 provide guidance for auditing environmental management systems.)

The casual observer may wonder what possible connection could exist between NEPA and a voluntary international standard. The connection exists because NEPA applies to all Federal agencies, and Federal agencies (and some of their contractors) have decided that there are important benefits from implementing an ISO 14001-style EMS. These benefits could range from better environmental monitoring to improved credibility with stakeholders.

The ISO 14001 EMS standard shares an important characteristic with the requirements for the NEPA review process. Both EMS and NEPA reviews require that an organization analyze activities affecting the environment to determine the "significance" of environmental impacts that may ensue. Under the EMS standard, this analysis is performed to support establishment of goals and targets for continually improving environmental performance.

Under ISO 14001, an organization first identifies the environmental "aspects" of its activities, products, and services, then examines the environmental impacts of these aspects and identifies which are "significant impacts." These form the basis for establishing goals and objectives for continual improvement that can be objectively audited.

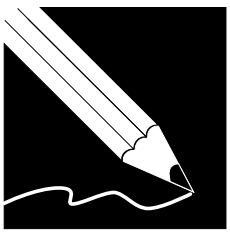
Similarly, the identification of "significant" environmental impacts in a NEPA review guides decision makers to areas where mitigation of adverse effects may be needed. Proposed Federal actions that may have "significant" impacts are assessed under a formal environmental impact statement process, which includes provisions for detailed analysis and extensive public involvement. If the impacts are not potentially "significant," a less stringent review process is applied.

"Significant" in the NEPA sense is related to the context and intensity or magnitude of the environmental effects. These characteristics are subject to analysis. In an ISO 14001 analysis, an impact can be deemed "significant" based on the same measures of impact intensity as under NEPA, or the impact may be deemed "significant" based on entirely different metrics that are more relative and qualitative in nature. In ISO 14001 usage, any environmental effects on resources that customers or stakeholders feel are important may be considered "significant" to the organization. These impacts would then be the subject of continual improvement goals under ISO 14001, regardless of the impact's intensity. An organization may develop an EMS for production processes or services that have "no significant impact" in NEPA's analytical terminology. Conversely, an organization can prioritize its goals and objectives to address only the "most significant" impacts at any one time.

Thus, it is possible for the NEPA and EMS review processes to arrive at differing descriptions of "significance" for the same activity. For example, an agency may issue a "Finding of No Significant Impact" under NEPA for a proposed action, while it nevertheless addresses "significant impacts" in an EMS applicable to the same action.

Differences between the ISO and NEPA contexts for "significant impacts," if not explained, could lead to challenges to the conclusions of a NEPA review. Therefore, NEPA practitioners need to understand the relatively new ISO process, and ISO practitioners need to understand the relatively more rigorous NEPA usage of the term "significant." By understanding the proper use of the term in each context, NEPA and ISO practitioners can avoid confusion as they work toward their common goal of enhancing environmental quality.

For more information, contact Warren T. Hinds, Office of NEPA Policy and Assistance, EH-42, at (202)-586-7855 or Steven R. Woodbury, Office of Environmental Policy and Assistance, EH-41, at (202)-586-4371.

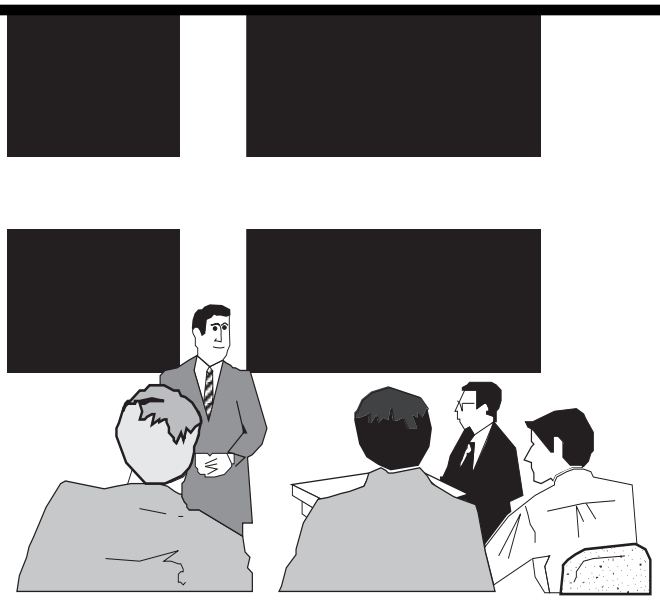


REQUEST FOR ARTICLES

The Synergy staff is always interested in receiving articles from both Headquarters and field personnel on issues, programs, or projects of general interest to our readers. We will also be happy to provide editorial assistance if you require it. If you have an article you would like to submit, please contact Mary Cunningham at 301/903-2072, fax: 301/972-0118, or via e-mail *(mary.cunningham@eh.doe.gov).* If you'd prefer to submit articles by mail, the address is: Mary Cunningham, ES&H Synergy Editor, EH-72, 20300 Century Boulevard, Germantown, Maryland 20874.

DOE Participates in Organization for Economic Cooperation and Development Workshop in Stockholm

Larry Stirling, Office of Environmental Policy and Assistance, served on the U.S. delegation at a workshop on "Environmental Management Systems for Government Agencies" hosted in Stockholm, Sweden, on January 14-15, 1998. The 2-day workshop on environmental management systems (EMS) was the third in a series organized by the Organization for Economic Cooperation and Development (OECD) to aid member governments with initiatives to "green" their own activities. The effort is part of the OECD's Programme on Sustainable Consumption and Production. OECD Ministers have formally recognized the tie between economic development and environmental management as a key in moving toward a sustainable society. As a result, the government of Sweden, in cooperation with OECD, hosted the workshop on EMS design and implementation in government agencies.



In opening remarks, Mrs. Anna Lindh, Sweden's Minister of Environment, noted that use of environmental management systems is a main priority of Sweden's Prime Minister, Mr. Goran Persson, and was included in his state of the environment address to the Swedish Parliament last September. She also noted that "Companies recognize environmental management systems as part of their central business strategy because it is profitable. Now, public-sector interest is increasing." She pointed out that "Public procurement using environmental management systems and environmentally sound products are appropriate for spending public funds, leading to a sustainable society."

Mrs. Joke Waller-Hunter, Director-designate, OECD Environmental Directorate, stated that "Government can provide a model to lead the way to a sustainable society using environmental management systems as a tool." Mrs. Kerstin Brunnstrom, Political Advisor, Ministry of Environment, spoke of using the ISO 14001 Environmental Management System Standard in the Swedish central government. "We will be a good example," she said, "integrating environment into daily activities." Other speakers addressed more specific challenges and opportunities in using environmental management systems in the public sector. Mrs. Birgitta Bohlin, Director-General, Defence Material Administration, addressed the use of procurement as a tool and the potential for negotiating on environmental issues with vendors selling to the Defence Material Administration.

The purpose of the workshop was understanding of state-of-the art practices in OECD governments, including "good practice" strategies for designing EMS, important barriers to the development and integration of EMS — and how to overcome them—as well as policy recommendations to promote further progress.

After plenary sessions, participants were divided into three work groups; each addressing a specific area: (1) barriers to implementing EMS, (2) how to imbed EMS in government, and (3) application of EMS to regional and local governments. Each group conducted a rigorous discussion and reported back to the full group at the end of the workshop.

The group addressing barriers to design and implementation of EMS identified a wide range of obstacles. These included institutional barriers, such as procurement requirements, and nonenvironmental standards. Financial barriers were also identified, including requirements to purchase the cheapest rather than best value products and lack of flexibility in procedures for purchasing. Management and the lack of a good management system was the third barrier. Finally, cultural barriers, such as risk aversion, were identified.

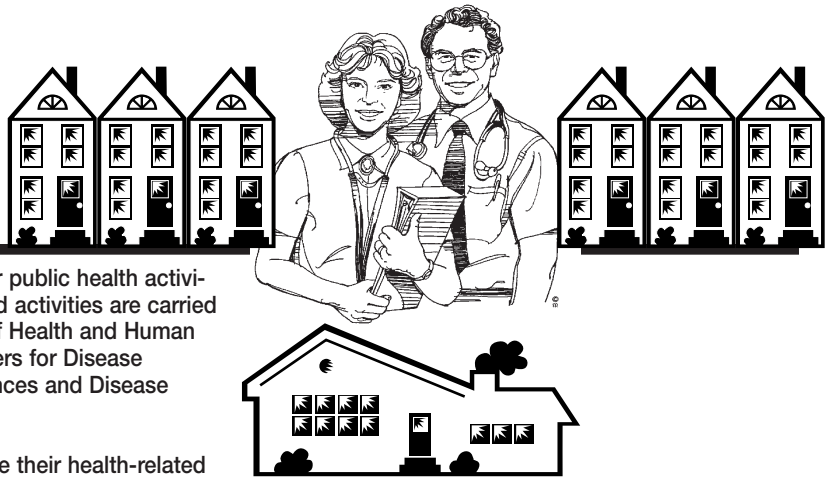
The group working on strategies to imbed EMS in government operations identified a broad range of potential approaches and tools. One insight was that EMS could be a framework for greening all government operations. They also advocated use of behavioral changes such as role models, incentives, and public/private partnerships. Technical training and assistance were discussed. In addition, they identified the value of developing "OECD Principles" and accompanying guidance and considered the value of bench-marking EMS costs and benefits. And, on each topic, the role of information sharing, especially using Internet web sites and pilot projects, was discussed.

Next steps will include placing the workshop and its discussions in the broader context of public-sector management. OECD Ministers will be meeting in April 1999 to discuss the greening of OECD governments. A report from the workshop on the state-of-the-art of EMS in OECD countries, including "good practices," and strategies for implementation, will be prepared and presented at the meeting. The workshop discussion will also become a chapter in the 1999 report to the OECD Council on Progress in Improving the Environmental Performance of Government, as requested by a 1996 OECD Council Recommendation on Improving the Environmental Performance of Government. Finally, an information exchange network, including a Web Site on the greening of governments, will be developed for OECD government officials working on the design and implementation of EMS for government agencies.

Other U.S. participants in the workshop included Jim Edward, Associate Director, EPA's Federal Facility Enforcement Office, who chaired the U.S. delegation, and Mary McKiel, Director EPA's Voluntary Standards Network. A follow-on workshop will be held at a time and place to be determined.

For additional information, contact Larry Stirling, Office of Environmental Policy and Assistance, EH-41, at (202) 586-2417 or by e-mail *(john.stirling@eh.doe.gov).*

Prioritizing Public Health Activities—Dialogues with Workers and Communities



The Department of Energy (DOE) funds health studies and other public health activities at its sites throughout the nation. Many of these studies and activities are carried out under Memoranda of Understanding with the Department of Health and Human Services (HHS). In particular, DOE provides funding to the Centers for Disease Control and Prevention (CDC) and the Agency for Toxic Substances and Disease Registry (ATSDR) for this purpose.

DOE and HHS have undertaken a joint effort to better coordinate their health-related work at sites across the DOE complex. As part of this endeavor, the two agencies are soliciting feedback from workers, communities, and other stakeholders regarding programs currently in place and the direction such health-related activities should take in the future. This dialogue includes public workshops and discussions with site-based health effects subcommittees and citizens advisory boards, which are being held at a number of DOE sites between now and this spring. Workshop participants usually include representatives from DOE's Office of Environment, Safety and Health (EH) and Office of Environmental Management (EM); CDC and ATSDR; the State health departments; the DOE site, its contractors, and its unions; and local stakeholders and members of the community. Meetings are open to the public and are advertised in the *Federal Register,* local papers, and newsletters. Key stakeholders receive direct invitations or notices. Written comments will be accepted after the workshop has been completed.

The workshops are formatted to encourage free exchange of ideas and information among all participants. They include presentations on current and planned health effects research and activities at the site. They also provide an opportunity for questions and comments from the audience, breakout sessions to identify and discuss future health research needs, and a summary session to present breakout session results to all participants. The breakout sessions are divided into two categories: occupational studies and community-based studies or activities. They are moderated by individuals acting as facilitators, and salient points from these sessions and the rest of the workshop are captured for a report that will be distributed to participants. In addition, "availability sessions" in which agency representatives participate in smaller, more private discussions with interested individuals are offered immediately before and after the core parts of the workshops. To accommodate those reluctant to participate and to receive additional suggestions, sponsoring agencies accept written comments at any time.

The ongoing dialogue established by this process offers an opportunity for DOE and HHS to interact more directly with stakeholders and gain a broader input to the formulation of an agenda for future health studies and other public health activities. This allows the agenda to be based on a set of priorities that responds to worker and community concerns, recognizes budgetary limitations, and leads to a clearer understanding of the health impacts of DOE operations and improved health protection and prevention programs for workers and communities.

A draft report on the results of this process will be presented to the management of EH, EM, CDC, and ATSDR in late April, with a final report expected by the end of June 1998. The recommendations presented in this final report, which reflects the general themes and priorities that emerged from stakeholder input, will be factored into DOE's budget for HHS health activities at DOE sites in fiscal year 2000.

For additional information, contact Barbara Brooks, Office of Epidemiologic Studies, EH-62, at (301) 903-4674 or e-mail *(barbara.brooks@eh.doe.gov).*

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- **Chronic Beryllium Disease Prevention Program**
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- **Fire Protection Program**
  http://tis.eh.doe.gov:80/fire/fire.html
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Environmental Protection Agency Evaluates Amending Hazardous Waste Recycling Regulations

The Environmental Protection Agency (EPA) is evaluating a proposal to reform the rules for hazardous waste recycling under the Resource Conservation and Recovery Act (RCRA). EPA's current regulations are promulgated in 40 CFR Part 261. Under the existing regulatory program, a material must first be defined as solid waste before it can be considered hazardous waste. One category of material that meets the current definition of solid waste is material that is recycled. Since recycled material is solid waste, it may be subject to the regulations governing hazardous waste if it also meets the definition of hazardous waste. The extent to which the hazardous waste regulations apply to recycled material depends on the type of material and the nature of the recycling process. Certain material that is recycled may qualify for exemption from the definition of solid waste, and thus not be subject to RCRA hazardous waste regulations.

Over the past several years, stakeholders have criticized the existing recycling regulatory system for lacking clarity and for posing a disincentive to safe recycling. Others have asserted that the regulations provide too many loopholes, which has led to unsafe recycling practices. EPA is responding to these charges through its ongoing recycling program reform. EPA has invited stakeholders to participate in its reform efforts. For example, EPA requested comments on waste management incentives published in the *Federal Register* on October 5, 1990 (55 FR 40881). The Department of Energy submitted comments to EPA on the need for revising the recycling definitions and gave examples of how the regulations could be simplified. (U.S. Department of Energy, consolidated response dated January 18, 1991.)

EPA's more recent reform proposals (which were presented in a public meeting on November 19, 1996) were intended to develop a clearer, simpler regulatory system for hazardous waste recycling that protects human health and the environment and provides incentives to safe recycling. The agency suggested two options for changing the definition of solid waste: (1) the "in-commerce" option, which would basically exempt from RCRA all onsite recycling of secondary materials; and (2) the "transfer-based" option, which would exempt from RCRA a limited amount of secondary materials that are transferred between industrial operations. This article provides a historical background, an overview of EPA's regulatory options, and information regarding the current status of EPA's effort to rewrite the hazardous waste recycling regulations.

History

1985	Definition of solid waste modified.
1985	New definition challenged by the American Mining Congress.
1987	U.S. Court of Appeals for the District of Columbia decides that EPA's RCRA jurisdiction does not extend to cases involving continuous processing of a material by either a single plant or possibly within a generating industry (American Mining Congress v. EPA, 824 F.2d 1177 [D.C. Cir. 1987]).
1992	Definition of Solid Waste Task Force established.
1994	Task Force report "Reengineering RCRA for Recycling" published.
1996	In September, new draft proposals floated.
1996	In November public meeting, background paper on options discussed.

Historical Background—While the text box summarizes the major milestones of the regulatory history of EPA's solid and hazardous waste recycling regulations, the following discussion focuses in more detail on the effort immediately preceding the most recent EPA proposals.

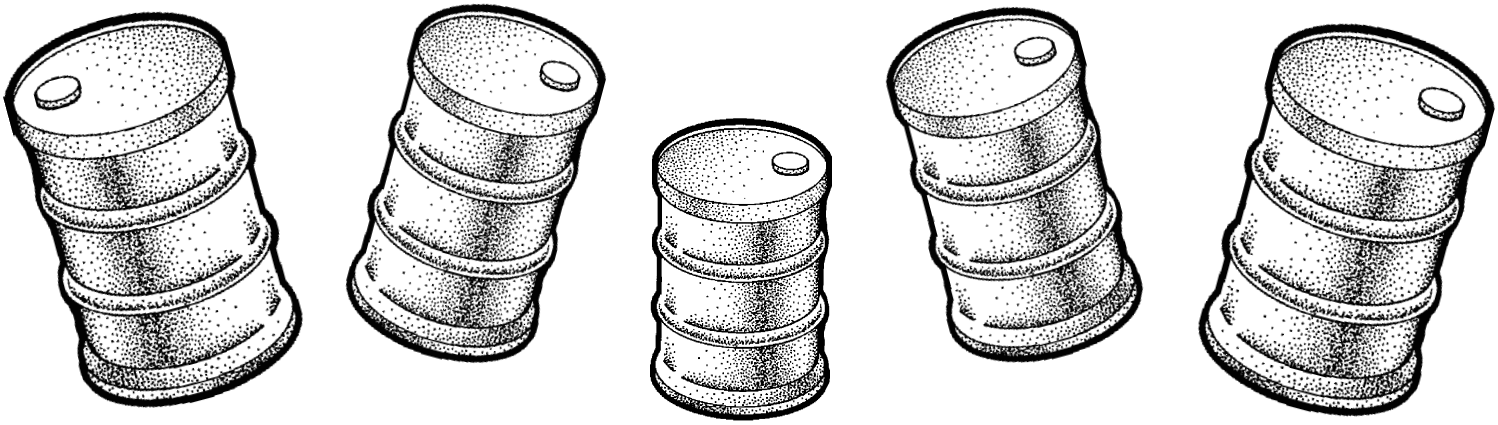
In 1992, EPA established the "Definition of Solid Waste Task Force," a small, internal EPA group reporting to the Director of the Office of Solid Waste (OSW). The Task Force was charged with three primary goals: (1) eliminate impediments to hazardous waste recycling; (2) correct over- and under-regulation of recycling; and (3) clarify and simplify applicable regulations. To carry out its mission, the Task Force engaged a variety of industry, environmental, and state groups in its discussions.

In 1994, the Task Force published a report entitled "Reengineering RCRA for Recycling." The report recommended a regulatory system that would divide recycling into three categories. The first category would be exempt from RCRA regulation, the second would be subject to tailored management standards, and the third would be subject to full hazardous waste management requirements. This approach, however, was not accepted by the regulated community and other stakeholder groups.

After some internal consideration and informal stakeholder discussions, EPA's Office of Solid Waste replaced the Task Force effort with a smaller-scale process involving EPA officials and some states, with a focus on simplification and jurisdictional issues. The effort resulted in EPA's most recent proposals which are discussed below.

Most Recent Proposals—As mentioned earlier, EPA presented a background paper on options for redefining RCRA jurisdiction in a November 1996 public meeting. EPA's paper lays out two options for amending the federal rules pertaining to hazardous waste recycling[1] activities: (1) the "transfer-based" option; and (2) the "in commerce" option.

Transfer-Based Option. The "transfer-based" option focuses on three major factors for determining whether a secondary material (e.g., byproducts, spent materials, and sludges) is subject to RCRA jurisdic-



tion: (1) where the secondary material is recycled, (2) how the secondary material is recycled, and (3) whether the secondary material is classified as a commodity-like material.

The "transfer-based" option would exclude a secondary material from the definition of solid waste if it were recycled onsite or within the same company, provided that the secondary materials are not burned for energy recovery or used to produce a product that would be burned for energy recovery; stored or otherwise managed on the land (i.e., land disposal as defined at 40 *CFR* 268.2[c]); used in a manner constituting disposal, or used to produce a product that is used in a manner constituting disposal; speculatively accumulated (note that the definition of speculative accumulation found at 40 *CFR*261.1[c][8] would be modified to allow 18 months of speculative accumulation wherein 100 percent of the material must be recycled); or designated as inherently waste-like (pursuant to 40 *CFR* 261.2[d]). [EPA, Background Paper, Options for Redefining RCRA Jurisdiction, Public Meeting, November 19, 1996, at pages 4 and 5.] The exclusion is also conditioned on certain basic recordkeeping and notification requirements.

If the generator failed to comply with such management conditions, hazardous secondary materials would be subject to regulation as hazardous waste, even though they were being recycled. Hazardous secondary materials sent offsite to a different company for recycling would also be considered hazardous wastes and would be subject to regulations applicable to hazardous waste being recycled. However, even if management conditions were not met with regard to secondary materials being recycled onsite or within the same company, or a transfer to an offsite recycler occurred, some wastes could still be excluded from RCRA jurisdiction if they were more "commodity-like" than "waste-like."[2]

If the "transfer-based" option were adopted, offsite hazardous waste recyclers would in general be required to obtain a RCRA treatment or storage permit, which could act as a barrier to recycling. To reduce this barrier without prejudicing protection of human health and the environment, EPA is suggesting a streamlined permitting process that would allow offsite hazardous waste recyclers and certain others to apply for a simplified, nationally issued "general permit."

In Commerce Option. The major factor in the "in commerce" option determining whether recycled hazardous secondary materials would be regulated as hazardous waste is "how" the secondary material would be recycled.

Under this approach, all recycling of secondary materials would be excluded from the definition of solid waste provided that the secondary materials are not CFR burned for energy recovery or used to produce a product that would be burned for energy recovery; stored or otherwise managed on the land; used in a manner constituting disposal, or used to produce a product that is used in a manner constituting disposal; speculatively accumulated, or designated as inherently waste-like (pursuant to 40 *CFR* 261.2[d]). [EPA, Background Paper, Options for Redefining RCRA Jurisdiction, Public Meeting, November 19, 1996, at pages 8 and 9.]

Hazardous secondary materials that are burned for energy recovery, stored or otherwise managed on land, used in a manner constituting disposal, speculatively accumulated, or designated as inherently waste-like are hazardous wastes and would be subject to full RCRA Subtitle C regulations. However, as under the "transfer-based" option, some wastes could still be excluded from RCRA jurisdiction if they were more "commodity-like" than "waste-like."

Current Status and Outlook—EPA's proposals have been criticized by environmentalists and industry, both of which have urged EPA to abandon the two options. While environmental groups argue that the proposals would exempt too many materials from RCRA without adequate environmental protection, industry representatives have asserted that the options could bring more materials into RCRA jurisdiction and complicate rather than streamline recycling rules. As a result, EPA has decided to reconsider and substantially revise its proposals. According to EPA sources, the agency will "return to the drawing board." Those sources say that EPA will in the short term focus on fixes "around the edges" of the current system. On a long-term scale, EPA will collect comprehensive data and conduct extensive research to (1) assess the experiences with currently exempt materials; and (2) understand risks resulting from recycling. The sources pointed out that it is too early to outline any kind of schedule, but they did not exclude further public meetings as EPA moves forward with its planning activities.

For further information, contact Emile Boulos, Office of Environmental Policy and and Assistance, RCRA/CERCLA Division, EH-41, at (202) 586-1306, fax (202) 586-3915, or e-mail *(emile.boulos@eh.doe.gov).*

1 "Recycling" would be defined as the use of a secondary material to produce a product such that: the product of recycling is sold, or otherwise has a demonstrable economic value; the secondary material makes a significant contribution to the recycling process or the product; no significant increase in levels of toxic constituents occurs; and the secondary material is managed to minimize loss. [EPA, Background Paper, Options for Redefining RCRA Jurisdiction, Public Meeting, November 19, 1996, at page 3.]

2 Under the "transfer-based" option (as well as the "in commerce" option), a list of "commodity-like" secondary materials would be promulgated that excludes from the definition of solid waste materials that are recycled in a manner consistent with normal production. Also, a case-specific variance procedure would be provided to exclude those secondary materials that, when recycled, are more commodity-like than waste-like (see 40 CFR 261.2(d) for materials that EPA defines as inherently waste-like).

Department of Energy Assists Russians in Microfilming Health Data

The Office of Environment, Safety and Health (EH) is assisting the Russians in microfilming valuable documents relating to the health impacts of the Mayak Production Association, a nuclear weapons plant located in Oyzorsk in the Southern Ural Mountains. (This plant was the object of Gary Power's surveillance flight in May 1960.) Russia's first plutonium production reactor began operating here in 1948, and the site has had serious problems with environmental contamination and exposures of workers and surrounding populations to radiation.

The extensive information about health effects collected by the Russians over the last 50 years related to this site is of great interest to scientists. It has the potential to answer questions in radiation research that remain unanswered by previous health studies of atomic bomb survivors and nuclear workers in the United States and Western Europe. Under the umbrella of the Joint Coordinating Committee for Radiation Effects Research (JCCRER), U.S. and Russian scientists have begun collaborative work using this data.

In October 1996, when then Assistant Secretary, Office of Environment, Safety and Health, Tara O'Toole visited the Urals in her capacity as the American head of the JCCRER, she was struck by the importance of the information and at the same time the poor state of the records. She was concerned about ensuring the future availability of this irreplaceable data and initiated a DOE-funded preservation project on her return.

Microfilm is being used for this project because it is the universally accepted medium for long- term archival preservation of records. Microfilming is fast, relatively cheap, and does not raise the problems of data migration as the technology changes. Stored under appropriate conditions, microfilm has a life expectancy of over 200 years. Nonetheless, for research and access purposes, optical media can be very useful; and this project, which is directed toward preservation, does not preclude the scanning of specific bodies of data and information in computer accessible formats for research when this scanning has been identified as useful. In fact, the microfilm can, with relative ease, be converted to scanned images.

The preservation program is focused on the information at the Mayak Production Association (primarily worker external dosimetry records) and the information at the associated First Institute of Biophysics (FIB-1), also in Oyzorsk, which has internal dosimetry and epidemiology records. An initial estimate was made of approximately 1,850,000 pages to be filmed, but this was probably an underestimate, particularly for the records at FIB-1. The International Science and Technology Center (ISTC) is being used to transfer the equipment and money provided by DOE to the Russians.

The project is moving forward with great success. A DOE representative, accompanied by a microfilm expert and records preservation specialist, visited Mayak and FIB-1 in early October 1997, after the microfilm equipment had arrived in Oyzorsk. The American team helped set up the equipment, trained the Russian participants in its use, and inventoried and described the records to be filmed at both sites. The Russians were warm and generous hosts during this extended visit, and it was a fascinating experience for the Americans to see a place only relatively recently opened to Western visitors.

Uncrating the equipment. On the left is Evgenii Vassilenko, who heads the Radiation Safety Office and is responsible for the Mayak dosimetry records. On the right is Ivan Aleksahkin.

To date, the Russians have produced 197 rolls of film and have encountered no unforeseen problems. Two of the American team members are planning to return in mid-April to review progress. An additional, small microfilm effort has also been undertaken at the Urals Research Center for Radiation Medicine (URCRM) in Chelyabinsk, which has records relating to population exposures from Mayak. A number of inactive records are being filmed at this facility, in conjunction with a JCCRER project to establish an imaging system for the active hospital records at this site.

For additional information, contact Elly Melamed, Office of Records, Research, Data and Access, EH-64, at (301) 903-8044 or e-mail *(elly.melamed@eh.doe.gov).*

Rocky Flats to Mayak–Whole Body Counter Project

Loading 64-ton vault onto low boy trailer.

The Department of Energy (DOE), through the collaborative efforts of the Office of International Health Programs, the Rocky Flats Environmental Technology Site, and Lawrence Livermore National Laboratory, is donating a 63-ton whole body counting shield and associated germanium detectors and electronic equipment to the scientists and workers at the Mayak Production Plant (First Institute of Biophysics, FIB-1) in the Southern Urals in Russia. Mayak is a plutonium-handling facility whose function and operation in the production of nuclear weapons was similar to that of Rocky Flats and Hanford. The whole body counting shield is unique because its 6-inch-thick walls, ceiling, and floor were manufactured from pre-World War II steel. Pre-World War II steel is free of contamination from modern smelting and recycling processes and, to a lesser extent, radioactive fallout from above-ground weapons testing. In addition, it is lined with lead, tin, and zinc to minimize interference from extraterrestrial and terrestrial background radiation, which can adversely affect plutonium measurements when individuals are "counted" with sensitive germanium detectors mounted inside the shield (hence the terms "graded" shield and "low-background shield"). With the decommissioning of facilities at Rocky Flats, the shield had been scheduled for demolition and resmelting. The detectors and electronics were already in surplus when scientists at Rocky Flats and Headquarters developed the plan to rescue the shield and equipment and send it to Russia.

On the weekend of December 20-21, 1997, an outside wall was carefully demolished at Building-123 and the massive shield was removed and loaded onto a truck bed. The shield was hauled to Oklahoma in early January where it is being disassembled and refurbished. Scientists at Lawrence Livermore National Laboratory are concurrently refurbishing the detectors and electronics. Both the shield and electronics are scheduled to be shipped to Finland where they will be moved by rail to the Southern Urals. The Russians will pour a concrete slab and build a building around the shield after the system is reassembled onsite. Scientists from Lawrence Livermore National Laboratory will translate manuals and train the FIB-1 scientists on the calibration and measurement protocols common to DOE laboratories. This cooperative effort between the U.S. and Russia will help insure that measurements of past and future plutonium (and americium) uptake by Russian workers at Mayak can be compared and pooled with data from U.S. workers. "This will greatly expand the database for future epidemiological research and help all scientists understand the human health effects of radiation exposure," said Peter Brush, Acting Assistant Secretary for Environment, Safety and Health, as quoted in a DOE news release and repeated in some press accounts. For additional information, contact Ed Podolak, EH-63, at (301) 903-7042 or e-mail *(ed.podolak@eh.doe.gov).* Details about other international health programs can be found at the Web Site http://tis-nt.eh.doe.gov/ihp/.

Watch for upcoming issues of the ES&H Synergy newsletter–We will be bringing you a series of interesting interviews with senior management across the complex.

Office of Environment, Safety and Health
EH-72, 270 CC
U.S. Department of Energy
19901 Germantown Road
Germantown, Maryland 20874-1290